REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 1, 9, 12, 14-18, 21 and 32 are amended. Claims 1-32 are pending.

Entry of Amendment under 37 C.F.R. § 1.116

The Applicant requests entry of this Rule 116 Response because: the amendments were not earlier presented because the Applicant believed in good faith that the cited references did not disclose the present invention as previously claimed; and the amendment does not significantly alter the scope of the claim and places the application at least into a better form for purposes of appeal.

The Manual of Patent Examining Procedures (M.P.E.P.) sets forth in Section 714.12 that "any amendment that would place the case either in condition for allowance or in better form for appeal may be entered." Moreover, Section 714.13 sets forth that "the Proposed Amendment should be given sufficient consideration to determine whether the claims are in condition for allowance and/or whether the issues on appeal are simplified." The M.P.E.P. further articulates that the reason for any non-entry should be explained expressly in the Advisory Action.

I.   **Rejections under 35 U.S.C. § 103**

McIlvain in view of Barton

In the Office Action, at page 5, claims 1-6, 8, and 18-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,765,200 to McIlvain et al in view of U. S. Patent No. 6,233,389 to Barton et al. This rejection is respectfully traversed because the combination of the teachings of McIlvain and Barton does not suggest:

> discontinuously sequentially assigning free blocks assigned to
> form a circular buffer as circular buffer blocks not arranged
> continuously in a disk recording area, based on the control
> information when a time-delayed viewing mode is selected; and
>
> recording video streams for time-delayed viewing in the assigned
> circular buffer blocks,

as recited in amended independent claim 1.

Further, the combination of the teachings of McIlvain and Barton does not suggest:

> a video stream storing area which records video streams, wherein

the video stream storing area comprises video stream blocks which are discontinuously sequentially assigned, the video stream blocks being blocks in a circular buffer not arranged continuously; and

a control information area which stores control information relating to the video stream storing area,

as recited in amended independent claim 18.

As a non-limiting example, the present invention according to claim 1, for example, is directed to a video stream processing method in which free blocks assigned to form a circular buffer are discontinuously sequentially assigned as circular buffer blocks, the circular buffer blocks not being arranged continuously in a disk recording area, based on control information when a time-delayed viewing mode is selected.

McIlvain discusses a storage device 200 including a plurality of data sets 202, each data set including a plurality of logical positions 204. The logical position can represent a block. McIlvain further discusses that it is possible to address a storage device using fixed block addressing or sector addressing. However, McIlvain does not suggest discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area. McIlvain discusses that the logical positions 204 may be included in a data set 202 and that the logical positions 204 are addressable and capable of having data stored therein or data read therefrom. However, McIlvain does not discuss that the logical positions 204 are free blocks nor does McIlvain suggest that the logical positions 204 are free blocks discontinuously sequentially assigned as circular buffer blocks not arranged continuously in a disk recording area, where the free blocks are assigned to form a circular buffer.

The Examiner alleges that, "discontinuous" circular buffer is interpreted to mean sectors on a hard disk. However, the logical positions 204 cannot be construed to be free blocks assigned to form a circular buffer where the free blocks are discontinuously sequentially assigned as circular buffer blocks which are not arranged continuously in a disk recording area. As shown in Fig. 2 of McIlvain, logical positions 204 are specifically arranged continuously in a disk recording area and are formed as a circular buffer, the circular buffer being, for example, one of the data sets 202. Further, McIlvain includes no discussion of the fact that the logical positions 204 are discontinuously sequentially assigned as circular buffer blocks not arranged continuously in a disk recording area.

Also, as conceded by the Examiner, McIlvain does not discuss or suggest the assigning of free blocks in a circular buffer being based on control information when a time-delayed viewing mode is selected. The Examiner indicates that Barton makes up for the deficiencies in McIlvain.

Barton discusses that a video component is placed in a circular video buffer and an event is posted in the event buffer containing an indication that a video component was found and the location of the video component in the circular video buffer. Barton fails to make up for the deficiencies in McIlvain, specifically as to discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area. Further, Barton fails to discuss or suggest that the discontinuous sequential assigning of free blocks as circular buffer blocks not arranged continuously is based on control information when a time-delayed viewing mode is selcted. Thus, Barton fails to make up for the deficiencies in McIlvain, specifically as to discontinuously sequentially assigning free blocks as circular buffer blocks not arranged continuously.

In addition, the combination of Barton and McIlvain does not suggest a video stream storing area which records video streams, the storing area comprising video stream blocks discontinuously sequentially assigned, the video stream blocks being blocks in a circular buffer that are not arranged continuously. The locations 204 in McIlvain are clearly arranged continuously as a circular buffer, the circular buffer being one of the data sets 202. McIlvain includes no discussion of discontinuously sequentially assigning video stream blocks, where the video stream blocks are blocks in a circular buffer which are not arranged continuously.

Therefore, as the combination of the teachings of McIlvain and Barton does not suggest, "discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area, based on the control information when a time-delayed viewing mode is selected; and recording video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in amended independent claim 1, and the combination of the teachings of McIlvain and Barton does not suggest, "video stream blocks which are discontinuously sequentially assigned, the video stream blocks being blocks in a circular buffer not arranged continuously; and a control information area which stores control information relating to the video stream storing area," as recited in amended independent claim 18, claims 1 and 18 patentably distinguish over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 2-6, 8, 19 and 20 depend either directly or indirectly from independent claims 1 and 18 and include all of the features of their respective independent claims, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 19 recites that the video stream storing area includes, "circular buffer blocks which are discontinuously arranged, and which record ones of the video streams for time-delayed viewing; and free blocks which are assignable to be designated as the circular buffer areas, or which record other ones of the video streams during a mode other than a time-delayed viewing mode." Therefore, claims 2-6, 8, 19 and 20 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

<u>Aoki in view of Barton</u>

In the Office Action, at page 8, claims 21, 23-26, 28-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,099,231 to Aoki et al. in view of Barton. This rejection is respectfully traversed because Aoki in view of Barton does not suggest:

> a controller which discontinuously sequentially assigns free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously on the recording medium, based upon the control information in response to a time-delayed viewing mode being selected, and which records video streams for time-delayed viewing in the assigned circular buffer blocks,

as recited in amended independent claim 21.

In addition, the combination of the teachings of Aoki and Barton:

> a controller which records a video stream in free blocks of the recording medium or reads a recorded video stream recorded on the recording medium and discontinuously sequentially assigns free blocks assigned to form a circular buffer nearest to the recorded or reproduced free blocks as circular buffer blocks not arranged continuously,

as recited in amended independent claim 32.

Aoki discusses a data reproducing method which allows for reverse reproduction in which, when a read pointer advances to read data, which decreases the unread data area and increases the already-read data area, the control circuit 8 controls the pick-up 2 to read new data and advances the write pointer to a new address position to be able to write one sector of read data to the ring buffer. Aoki discusses that data is stored in a circular buffer and the stored data may be retrieved in a first and a second direction, allowing for reverse reproduction. Aoki does not, however, discuss or suggest discontinuously sequentially assigning free blocks

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assigned to form a circular buffer as circular buffer blocks not arranged continuously on the recording medium. As discussed above with respect to independent claims 1 and 18, data being stored in a circular buffer does not suggest discontinuously sequentially assigning free blocks as circular buffer blocks not arranged continuously on a recording medium. Aoki includes no discussion of discontinuous sequential assignment of free blocks, nor does Aoki discuss that the free blocks are assigned as circular buffer blocks which are not arranged continuously on a recording medium. In addition, Aoki does not discuss or suggest that the discontinuous sequential assignment of free blocks as circular buffer blocks not arranged continuously is based on control information in response to a time-delayed viewing mode being selected. The Examiner indicates that Barton makes up for the deficiencies in Aoki.

As discussed above with respect to independent claims 1 and 18, Barton fails to make up for the deficiencies in Aoki, which are similar to the deficiencies in McIlvain. Specifically, Barton does not suggest discontinuous sequential assignment of free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously, based on control information in response to a time-delayed viewing mode being selected. Thus, the combination of Aoki and Barton does not suggest the discontinuous sequential assigning of free blocks as circular buffer blocks not arranged continuously.

Therefore, as the combination of Aoki and Barton does not suggest, "a controller which discontinuously sequentially assigns free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously on the recording medium, based upon the control information in response to a time-delayed viewing mode being selected, and which records video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in amended independent claim 21, and the combination of the teachings of Aoki and Barton does not suggest, "a controller which records a video stream in free blocks of the recording medium or reads a recorded video stream recorded on the recording medium and discontinuously sequentially assigns free blocks assigned to form a circular buffer nearest to the recorded or reproduced free blocks as circular buffer blocks not arranged continuously," as recited in amended independent claim 32, claims 21 and 32 patentably distinguish over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 23-26 and 28-31 depend either directly or indirectly from independent claim 21 and include all of the features of claim 21, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 25 recites that, "the controller updates the control information and sets a pointer of a write point to a last one of the assigned

circular buffer blocks after recording the video streams." Therefore, claims 23-26 and 28-31 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

McIlvain, Barton and Aoki

In the Office Action, at page 11, claims 7, and 9-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McIlvain in view of Barton and in further view of Aoki. This rejection is respectfully traversed because the combination of the teachings of McIlvain, Barton and Aoki does not suggest:

> discontinuously sequentially assigning free blocks assigned to
> form a circular buffer as circular buffer blocks not arranged
> continuously in a disk recording area and recording video streams
> for time-delayed viewing in the assigned circular buffer blocks,
> based on the control information when a time-delayed viewing
> mode is selected; and

> assigning free blocks of the disk recording area and recording
> video streams of a channel to be recorded in the assigned free
> blocks when a recording mode is selected during the time-delayed
> viewing mode, assigning free blocks nearest to the recorded free
> blocks as the circular buffer blocks, and recording the video
> streams for time-delayed viewing in the assigned circular buffer
> blocks,

as recited in amended independent claim 9.

Further, the combination of the teachings of McIlvain, Barton and Aoki does not suggest:

> discontinuously sequentially assigning free blocks assigned to
> form a circular buffer as circular buffer blocks not arranged
> continuously in a disk recording area and recording video streams
> for time-delayed viewing in the assigned circular buffer blocks,
> based on the control information when a time-delayed viewing
> mode is selected;

> assigning free blocks of the disk recording area, recording video
> streams of a channel to be recorded in the assigned free blocks,
> assigning free blocks nearest to the recorded free blocks as the
> circular buffer blocks, and recording video streams for time-
> delayed viewing in the assigned circular buffer blocks, when a
> recording mode is selected together with the time-delayed viewing
> mode; and

> reading free blocks to be reproduced based on the control
> information, assigning free blocks nearest to the reproduced free
> blocks as the circular buffer blocks, and recording the video
> streams for time-delayed viewing in the assigned circular buffer
> blocks, when a reproduction mode is selected together with the
> time-delayed viewing mode,

as recited in amended independent claim 12.

Additionally, the combination of the teachings of McIlvain, Barton and Aoki does not suggest:

> discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected; and

> reading blocks to be reproduced based on the control information, assigning free blocks nearest to the reproduced free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks, when a reproduction mode is selected together with the time-delayed viewing mode,

as recited in amended independent claim 14.

Also, the combination of the teachings of McIlvain, Barton and Aoki does not suggest:

> assigning free blocks of a recording disk area;

> recording video streams of a channel to be recorded in the assigned free blocks;

> discontinuously assigning free blocks assigned to form a circular buffer nearest to the recorded free blocks as circular buffer blocks not arranged continuously; and

> recording the video streams for time-delayed viewing in the assigned circular buffer blocks,

as recited in amended independent claim 15.

Further, the combination of the teachings of McIlvain, Barton and Aoki does not suggest:

> reading blocks to be reproduced based on the control information;

> discontinuously assigning free blocks assigned to form a circular buffer nearest to the reproduced free blocks as circular buffer blocks not arranged continuously; and

> recording video streams for time-delayed viewing in the assigned circular buffer blocks,

as recited in amended independent claim 16.

Also, the combination of the teachings of McIlvain, Barton and Aoki does not suggest:

> recording a video stream in free blocks of a disk recording area or reading a recorded video stream recorded in the disk recording area; and

discontinuously assigning free blocks assigned to form a circular
buffer nearest to the recorded or reproduced free blocks as
circular buffer blocks not arranged continuously,

as recited in amended independent claim 17.

In arguments similar to the above with respect to independent claims 1, 18, 21 and 32, the combination of the teachings of McIlvain, Barton and Aoki fail to discuss or suggest, for example, discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected. Neither McIlvain nor Aoki discuss discontinuously sequentially assigning free blocks as circular buffer blocks not arranged continuously and do not discuss that video streams for time-delayed viewing are recorded in the assigned circular buffer blocks. As discussed above, Barton fails to make up for the deficiencies in McIlvain and Aoki. Specifically, Barton does not suggest that free blocks are discontinuously sequentially assigned as circular buffer blocks which are not arranged continuously in a disk recording area. In addition, the combination of McIlvain, Barton and Aoki does not suggest discontinuously assigning free blocks assigned to form a circular buffer nearest to recorded free blocks as circular buffer blocks not arranged continuously.

Therefore, the combination of the teachings of McIlvain, Barton and Aoki does not discuss or suggest, "discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected; and assigning free blocks of the disk recording area and recording video streams of a channel to be recorded in the assigned free blocks when a recording mode is selected during the time-delayed viewing mode, assigning free blocks nearest to the recorded free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in amended independent claim 9. The combination of the teachings of McIlvain, Barton and Aoki does not discuss or suggest, "discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected; assigning free blocks of the disk recording area, recording video streams of a channel to be recorded in the assigned free blocks, assigning free blocks nearest to the recorded free blocks

as the circular buffer blocks, and recording video streams for time-delayed viewing in the assigned circular buffer blocks, when a recording mode is selected together with the time-delayed viewing mode; and reading free blocks to be reproduced based on the control information, assigning free blocks nearest to the reproduced free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks, when a reproduction mode is selected together with the time-delayed viewing mode," as recited in amended independent claim 12. The combination of the teachings of McIlvain, Barton and Aoki does not discuss or suggest, "discontinuously sequentially assigning free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected; and reading blocks to be reproduced based on the control information, assigning free blocks nearest to the reproduced free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks, when a reproduction mode is selected together with the time-delayed viewing mode," as recited in amended independent claim 14. The combination of the teachings of McIlvain, Barton and Aoki does not discuss or suggest, "assigning free blocks of a recording disk area; recording video streams of a channel to be recorded in the assigned free blocks; discontinuously assigning free blocks assigned to form a circular buffer nearest to the recorded free blocks as circular buffer blocks not arranged continuously; and recording the video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in amended independent claim 15. The combination of the teachings of McIlvain, Barton and Aoki does not discuss or suggest, "reading blocks to be reproduced based on the control information; discontinuously assigning free blocks assigned to form a circular buffer nearest to the reproduced free blocks as circular buffer blocks not arranged continuously; and recording video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in amended independent claim 16. The combination of the teachings of McIlvain, Barton and Aoki does not discuss or suggest, "recording a video stream in free blocks of a disk recording area or reading a recorded video stream recorded in the disk recording area; and discontinuously assigning free blocks assigned to form a circular buffer nearest to the recorded or reproduced free blocks as circular buffer blocks not arranged continuously," as recited in amended independent claim 17. Therefore, claims 9, 12 and 14-17 patentably distinguish over the references relied upon. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

Claims 7, 10, 11 and 13 depend either directly or indirectly from independent claims 1, 9 and 12 and include all of the features of their respective independent claims, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 13 recites that, "the free blocks nearest to the recorded free blocks are in a same track or a nearest track of the recorded free blocks." Therefore, claims 7, 10, 11 and 13 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

<u>Aoki in view of Barton and Peters</u>

In the Office Action, at page 13, claims 22 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Aoki in view of Barton and further in view of U.S. Patent No. 5,884,284 to Peters et al. This rejection is respectfully traversed.

As discussed above with respect to independent claim 21, the combination of the teachings of Aoki and Barton does not discuss or suggest "a controller which discontinuously sequentially assigns free blocks assigned to form a circular buffer as circular buffer blocks not arranged continuously on the recording medium, based upon the control information in response to a time-delayed viewing mode being selected, and which records video streams for time-delayed viewing in the assigned circular buffer blocks." Peters fails to make up for the deficiencies in Aoki and Barton. Specifically, Peters discusses a telecommunication user account system and method that creates, maintains, processes and analyzes data regarding individual users for telecommunications services, but does not discuss or suggest the deficiency in Aoki, namely <u>discontinuously sequentially assigning</u> free blocks as circular buffer blocks <u>not arranged continuously on the recording medium</u> based on control information in response to a time-delayed viewing mode selected and recording video streams for time-delayed viewing in the assigned buffer blocks.

As the combination of Aoki, Barton and Peters does not suggest all the features of claim 21, independent claim 21 patentably distinguishes over the references relied upon. Claims 22 and 27 depend either directly or indirectly from claim 21 and include all the features of claim 21, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 27 recites "a read-only memory which stores control program data to control the random access memory and the hard disk drive; and a second random access memory which temporarily stores data during a control operation of the controller." Therefore, claims 22 and 27 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

Conclusion

In accordance with the foregoing, claims 1, 9, 12, 14-18, 21 and 32 have been amended. Claims 1-32 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.
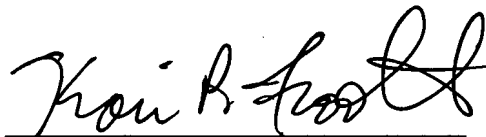
Respectfully submitted,

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